



**CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES**

PLAN APPROVAL

Approval No: 16013

Plant ID: 01501

Source: Philadelphia Energy Solutions Refining and Marketing LLC (PES)

Location: 3144 Passyunk Avenue. Philadelphia, PA 19145-5299

Attention: Ms. Janet Ferris, Environmental Manager

Address: 3144 Passyunk Avenue. Philadelphia, PA 19145-5299

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Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health, Air Management Services (AMS) on **July 11, 2017** approved plans for the modification of the air contamination source(s) described below:

- Modify Condition 11 of Plan Approval No. 05214 dated October 4, 2005 to allow hydrogen Sulfide (H₂S) monitoring of the fuel gas supplied to the 1332 H₂ Heater (CU0009) at the Girard Point Mix Drum (V-10001) in lieu of the original H₂S CEM installed at 1332 H-2 Heater under Plan Approval No. 05214. Plan Approval No. 05214 was to replace the 1332 CRU H-2 Hydrocarbon Heater with a new unit. Both the original unit and the replacement unit burn refinery fuel gas and have a capacity of 60 MMBTU/hr.
- The original H₂S CEM installed at the 1332 H₂ Heater is currently referenced in the H₂S CEMS Location Table in the Title V Permit number V06-16, Group 2, Monitoring Requirements, Condition 1, item (iv) This Plan Approval allows the removal of the H₂S CEM at the 1332 H₂ Heater Unit.
- The Girard Point Mix Drum is the only fuel source that is supplied to the 1332- H₂ Heater and the GP Mix Drum shall be equipped with a certified H₂S CEM to monitor the H₂S of fuel gas.
- Incorporate the RACT Plan Approval Requirements dated 2/19/2016 for the 1332 H₂ Heater in Condition 13 of this Plan Approval.

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This plan approval expires on January 11, 2019. If modification has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating per. The sources covered by this plan approval are subject to the conditions prescribed in the attachment.

A handwritten signature in blue ink, appearing to read "Edward Wiener", is centered within a light yellow rectangular box.

Edward Wiener
Chief, Source Registration

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1. The above source shall be installed in accordance with the specifications in the application (as approved herein).
2. The heater shall fire only refinery fuel gas. The firing rate shall not exceed 60 MMBTU/hr.
3. The heater shall be equipped with Ultra Low NOx burners and shall achieve a NOx emission rate of 0.04 lbs/MMBTU at 3% oxygen at full design load, 3-run average. [25 PA Code § 127.1, assures compliance with the RACT Plan Approval dated 2/19/2016]
4. Carbon Monoxide (CO) emissions from the heater shall not exceed 400 ppm_{dv} at 3% oxygen, 3-run average. [40 CFR 63 Subpart DDDDD, Table 1]
5. Particulate matter emissions from the heater shall not exceed 0.10 lbs/MMBTU gross heat input.
[AMR II. Section V.2]
6. Sulfur Dioxide (SO₂) emissions from the heater shall not exceed 0.53 lbs/MMBTU at any time or 0.33 lbs/MMBTU on a rolling 365-day average. [SO₂ Operating Permit No. SO2-95-039]
7. The Hydrogen Sulfide content of refinery fuel gas burned in the heater shall not exceed 0.10 grains per dry standard cubic foot. [40 CFR 60.104(a)(1) – assures compliance with Condition 6]
8. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:
 - (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
 - (b) Equal to or greater than 60% at any time.
9. The heater shall be installed, maintained, and operated in accordance with manufacturer's specifications.
10. Within 180 days after initial start up, PES shall conduct performance tests to demonstrate compliance with the Nitrogen Oxide emission limit specified in Condition 3 and the Carbon Monoxide emission limit specified in Condition 4. The CO performance test shall meet the requirements of 40 CFR 63.7520 and Table 5 of 40 CFR 63 Subpart DDDDD. The stack test protocol shall be submitted to AMS for approval at least 30 days before the test date and the test results shall be submitted within 60 days after the test.

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11. PES shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 40 CFR 60.105(a)(4) and 25 PA Code Chapter 139.
 - (a) The H₂S in the refinery fuel used for the 1332 H₂ heater has shall be monitored at the H₂S CEM at the GP Mix Drum (V-100010) and shall be certified [Application].
 - (b) The Girard Point fuel gas shall be the only source of fuel supplied to the 1332 H-2 Heater. [Application]
12. PES shall install and operate a fuel flow monitor on the heater.
13. PES shall comply with the RACT Permit requirements for the 1332 H-2 Heater.[RACT Plan Approval dated 2/9/2016]
 - (a) PES will use combustion tuning to comply with RACT requirements for the 1332 H-2 Heater.
 - (b) PES shall monitor all fuel input to all heaters and boilers with BTU limitations on a daily basis to insure capacity limits are not exceeded or PES shall install fuel limiting devices on the heaters or boilers to keep capacities below allowable.
 - (c) Compliance with emission limits for 1332 H₂ Heater (0.040 lbs/MMBTU/hr) shall be determined by quarterly stack sampling with a portable NO_x analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at any time, require three one-hour stack tests.
14. PES shall analyze fuel gas samples for heating value daily.
15. PES shall keep the following records for the heater:
 - (a) Continuous Hydrogen Sulfide monitoring system records.
 - (b) Records of daily refinery fuel gas consumption, heating value, and sulfur content.
 - (c) Stack test results.

These records shall be kept for a minimum of 5 years and produced upon request by AMS.
16. PES shall submit all notifications required by 40 CFR 63.7545.
17. PES shall submit excess emissions reports in accordance with 40 CFR 60.7(c), including all rolling 3-hour periods during which the average concentration of H₂S in fuel gas burned in the heater exceeded 0.1 grains per dscf. [40 CFR 60.105(e)(3)]
18. PES shall submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD.
19. PES shall submit immediate startup, shutdown, and malfunction repots in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

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20. PES shall within two hours of knowledge of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.